

Management of UNOLS Marine Technician Pool

PROGRAM SOLICITATION

NSF 15-525



National Science Foundation

Directorate for Geosciences
Division of Ocean Sciences

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

April 15, 2015

IMPORTANT INFORMATION AND REVISION NOTES

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) ([NSF 18-1](#)), which is effective for proposals submitted, or due, on or after January 29, 2018.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Management of UNOLS Marine Technician Pool

Synopsis of Program:

Oceanographic facilities and equipment are supported by the National Science Foundation through the Integrative Programs Section (IPS) within the Division of Ocean Sciences (OCE), Directorate for Geosciences (GEO). Awards are generally directed to support facilities that lend themselves to shared use within the broad range of federally-supported research and education programs. NSF support includes awards for the procurement, conversion and/or up-grade, enhancement or annual operation of research vessel platforms in the ocean, coastal, near-shore and Great Lakes. The vessels are either state or federally owned, and operated by academic institutions within the University National Oceanographic Laboratory System (UNOLS). Most of these platforms and their associated facilities also receive partial support from other federal agencies, state and local governments, and private sources on a proportional basis.

The scientific productivity of research programs conducted by the U.S. Academic Research Vessel Fleet is enhanced by providing technical support services to all users of the facility. Maintaining availability of qualified Technicians for ship-based research is a long-standing and proven method of optimizing technical support. Individual Operating Institutions employ and assign permanent Technicians to research vessels under their purview. However, there are frequent occasions in which it is necessary and desirable to hire temporary or part-time Technicians to meet unexpected or surge demands across the fleet. Procedures for meeting this requirement vary between Operating Institutions and are frequently inconsistent, complex and time consuming.

This solicitation seeks to streamline the inherent inefficiencies in meeting varying demands for technical support by establishing a centrally managed Pool of Temporary and Part-time Technicians that can be made readily available to vessel Operating Institutions across the US Academic Research fleet. A single award is anticipated for Management of a centralized, UNOLS Technician Services Pool by a Technician Pool Host Institution (TPHI).

Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.

- James Holik, Program Director, W8134, telephone: (703) 292-7711, email: jholik@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.050 --- Geosciences

Award Information

Anticipated Type of Award: Cooperative Agreement - 5 Year Period of Performance

Estimated Number of Awards: 1

Anticipated Funding Amount: \$1,750,000 to \$3,000,000

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization: 1

Potential PIs are advised to contact their institutional office of research regarding processes used to select proposals for submission.

Limit on Number of Proposals per PI or Co-PI:

There are no restrictions or limits.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not required
- **Preliminary Proposal Submission:** Not required
- **Full Proposals:**
 - Full Proposals submitted via FastLane: *NSF Proposal and Award Policies and Procedures Guide (PAPPG)* guidelines apply. The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.
 - Full Proposals submitted via Grants.gov: *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov* guidelines apply (Note: The *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide).

B. Budgetary Information

- **Cost Sharing Requirements:**

Inclusion of voluntary committed cost sharing is prohibited.
- **Indirect Cost (F&A) Limitations:**

Not Applicable
- **Other Budgetary Limitations:**

Not Applicable

C. Due Dates

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

April 15, 2015

Proposal Review Information Criteria

Merit Review Criteria:

National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

Award Conditions:

Standard NSF award conditions apply.

Reporting Requirements:

Additional reporting requirements apply. Please see the full text of this solicitation for further information.

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I. INTRODUCTION

NSF is soliciting proposals from UNOLS Institutions to host a Technician Pool. NSF is seeking to provide Operating Institutions with greater flexibility in achieving the optimum staffing levels to support at-sea and shore-side work, while at the same time providing a more cost effective and efficient mode of operation across the U.S. Academic Research Vessel Fleet. NSF has instituted a process whereby the exchange of full-time Technicians between ship Operating Institutions can occur without the administrative burden of sending invoices and payment between institutions. This process is now be coordinated through the UNOLS Technical Services Manager (TSM), accounted for in the annual reports, and reconciled through yearly carry-forward negotiations.

NSF would like to broaden Technician Support capability by establishing a process whereby institutions can utilize non full-time Technicians through use of a Technician Services Pool. It is recognized that many institutions have HR policies that make it difficult to hire temporary/part time employees. Hiring non full-time Technicians through a single UNOLS institution into a Technician Services Pool for use across institutions will ease these problems and provide recourse for operators in the fleet to deal with unusual support demands or unanticipated staffing issues. The National Oceanic and Atmospheric Administration (NOAA) fleet of research vessels operates under a similar model with their Augmentation Pool. Employees of the NOAA Augmentation Pool are hired in such a way that their full-time status (e.g. pay, benefits, etc.) are be turned "on" when the employee is working and "off" when he/she is not working.

The approach envisioned by this Solicitation is to establish an initial Pool of research vessel Technicians comprised of qualified individuals who have been orphaned by the retirement of their vessels or who have chosen to be assigned to the Pool subject to approval of their Operating Institution. Dependent on the success of these activities, as well as the operating budgets of the Federal

Agencies, the Pool may be expanded to encompass a larger percentage of the sea-going support staff.

II. PROGRAM DESCRIPTION

The U.S. Academic Research Vessel Fleet has been well served by the Pooling of resources to achieve better, more efficient science support. Examples include the UNOLS Van Pools, Winch Pools and the Rolling Deck to Repository (R2R). This solicitation strives to achieve the similar advantages through a Pool of Technicians hosted by a single operating institution. The Pool will give Technician Managers more flexibility and reduce some of the difficulties in hiring short-term and/or last-minute employees. These Technicians will be part-time or contract employees of the Technician Pool Host Institution (TPHI). Once it is established, NSF expects the Technician Pool to grow and become a robust source of trained, qualified Technical support personnel for the academic fleet. The Pool could also serve as a possible source for recruiting fulltime Technicians as positions open at ship operating institutions.

The goal of the Technician Pool is to provide a mechanism whereby institutions can rapidly draw on qualified Technical support in the event of a larger than normal schedule, unexpected personnel shortages, changes in schedule, research cruises that demand specialized support or an increase in the Technical footprint at sea for demanding cruises.

The host institution for this Pool must be able to serve as a clearinghouse for the part-time or contract employee effort. The institution's policies and procedures must be flexible enough to support hiring employees quickly, meeting payroll requirements and working with the UNOLS TSM to place Technicians at various ship operating institutions, potentially on short notice. The TPHI will be funded directly through the NSF Technical Services Program. Scheduling of the Technicians will be coordinated by the UNOLS Technical Support Manager who will work closely with the various Operating Institutions and the TPHI.

III. AWARD INFORMATION

Anticipated Type of Award: Cooperative Agreement - 5 Year Period of Performance

Estimated Number of Awards: 1

Anticipated Funding Amount: \$1,750,000 to \$3,000,000

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization: 1

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Limit on Number of Proposals per PI or Co-PI:

There are no restrictions or limits.

Additional Eligibility Info:

OCE support for ocean science research and education is distributed throughout the United States at a number of institutions suitably located and geographically positioned to carry out operations. Institutions may include colleges and universities and associations of colleges and universities. To qualify for an award from this solicitation, an institution must have a substantial in-house ocean science research program, and must demonstrate the capability to

operate the facility effectively and economically with procedures to support qualified researchers from other parts of the oceanographic community.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg. Paper copies of the PAPPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.
- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov*. The complete text of the *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: (https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. PAPPG Chapter II.D.3 provides additional information on collaborative proposals.

See PAPPG Chapter II.C.2 for guidance on the required sections of a full research proposal submitted to NSF. Please note that the proposal preparation instructions provided in this program solicitation may deviate from the PAPPG instructions.

Additional supplementary documentation is required for this solicitation. There are many factors that must be taken into consideration when hosting a Pool of part time and contract Technicians. At a minimum, the proposal must address the items described in the set of topics immediately below within the context of the associated requirements. Although certain relevant ideas/suggestions are listed for some topics, NSF emphasizes that these are only suggestions and encourages innovative approaches as to how the Technician Pool can be established and managed with the greatest efficiency.

A. Structure

Define how your institution's Technician Pool model will incorporate the requirements below. Describe your organizational structure for the proposed Technician Pool (include an organizational chart). Explain the TPHI's hiring practices (including vetting process), criteria for differentiating between different levels of Technicians (if proposed), and management philosophy. The focus of the TPHI should be the administrative aspects of the Technician Pool. Describe how your institution will leverage the UNOLS TSM to effectively and efficiently operate the Technician Pool.

Requirements:

- The TPHI will administer hiring, benefits, and travel. Technicians in the Technician Pool will be hired and hosted through the Technician Pool Host Institution (TPHI) but will work on ships throughout the fleet.
- Scheduling of the Technicians will be coordinated through the UNOLS office, specifically the UNOLS TSM.
- The cognizant NSF Program Officer must approve the use/funding of a Technician above basic services levels.
- The UNOLS TSM in conjunction with the operating institution and the TPHI (minimally) will make the selection of the Technician(s). The operating institution has final approval on the Technician.
- The Technicians in the Pool will primarily be sea-going and will not be expected to work on-shore between research cruises unless shore-based projects are requested.
- The TPHI must have the ability to easily hire short-term Technicians to meet last minute requirements.
- Education minimums should not preclude hiring as long as experience requirements are met.

Ideas/Suggestions:

- There could be two types of Technicians – long-term and short-term. Long-term Technicians are Technicians who work regularly within the academic fleet where short-term Technicians are hired for one-off deployments.
- Long-term Technicians could be employees of the TPHI while short-term Technicians could be hired as independent contractors.
- There could be three levels of Technicians based on experience and ability with a salary structure to match.

B. Compensation and Benefits

Describe the overall compensation structure (including sea-pay and fringe benefits) for members of the Technician Pool and how it will meet the requirements below. Explain how your institution's model can accommodate the unique demands of sea-going only and/or temporary employees. Present a fully loaded day-rate(s) for a member of the Technician Pool (salary, sea-pay, fringe, administrative and indirect costs) for each level/types of Technician (if applicable) for both at-sea and shore-side work. Describe the number of hours of work for typical work days/weeks at sea and ashore (both mobilization/demobilization days and shore-based projects).

Requirements:

- o Technician Pool members who meet a minimal number of sailing days (as determined by the host institution) will receive institutional fringe benefits unless they are hired as independent contractors.
- o Salaries must be competitive with others in the academic fleet. (NOTE: UNOLS Office has data from a salary survey conducted in 2011. This data is available for proposers and can be requested from the cognizant Program Manager.)
- o 12hr workdays at sea are considered standard.

Ideas/Suggestions:

- o Technician Pool members could receive a set sea-pay uplift in lieu of overtime.
- o The minimal work days required to receive benefits could be approximately 115 days.
- o Technicians who do not work the minimum number of days to qualify for benefits could be hired as independent contractors. They do not receive benefits from the institution but could be compensated at a higher rate to offset the lack of benefits.

C. Liability/Workman's Compensation Insurance

Describe your institution's model to meet the requirement below.

Requirement:

- o Technician Pool members will be fully covered through the TPHI's Liability and Workman's Compensation insurance while working for the Technician Pool.

D. Travel

Describe your institution's model to meet the below requirements. Explain how your model can meet the challenges of scheduling travel for multiple Technicians with dynamic schedules. Propose how your model will handle the issue of personal travel.

Requirements:

- o Unless specified by the UNOLS TSM, all Technician Pool members' travel will be arranged by the TPHI.
- o The UNOLS TSM will coordinate travel dates in conjunction with the vessel operators. Travel arrangements will be modified as ship schedules or project schedules change.

E. Training/Conferences

Describe your institution's model for training/conferences for Pooled Technicians. Explain how your model will help ensure that the skills of the Technician Pool employees will be kept current. Discuss how training/conferences will be selected.

Requirements:

None.

Ideas/Suggestions:

- o Each Technician who works at least 115 days per year could be allowed to attend at least 1 training course or conference per year in addition to the annual RVTEC meeting (as schedules permit).

F. Indirect Costs

Present the indirect cost rate and for what it is applied.

Requirements:

None

Ideas/Suggestions:

- o Technicians Pool members are working away from the institution and thus could qualify for reduced, off-campus indirect cost rates if available.

G. Budgeting and Accounting

As a Cooperative Agreement, an annual budget will be developed and negotiated with the cognizant Program Officer. The budget will be based on an estimated work force and schedule provided by the NSF and UNOLS TSM. In addition, quarterly reports will be required to reflect current spending. Differences between funded and actual expenses in the Technician Pool will be handled as carry-forward in the subsequent year or mid-year supplements as required.

For the purpose of this proposal, develop a budget for the Technician Pool model proposed above that would support the following Technicians. Please include any associated training costs.

3ea Long-Term Technicians

- o 1ea Sr. Technician – 175 days at sea (includes mobilization (mob) days and demobilization (demob) days), 6 cruises, 2 international, 4 domestic plus 30 days shore side work at Moss Landing Marine Lab.
- o 1ea Mid-grade Technician – 150 days at sea (includes mob and demob days), 6 cruises, 1 international, 5 domestic
- o 1ea Entry-level Technician – 115 days at sea (includes mob and demob days), 6 domestic cruises,

2ea Short-Term Technicians

- o 1ea Sr. Technician – 30 days at sea (includes mob and demob days), international
- o 1ea Sr. Technician – 45 days at sea (includes mob and demob days), domestic

Requirements:

- o Address all salaries and wages including number of months charged at sea and ashore, other direct costs and indirect costs required to support the Technicians outlined above.
- o Budget should outline administrative costs
- o Budget should include a day rate for each Technician or Technician category (if applicable).
- o Budget should include any training/conferences.
- o Budget should include any travel costs.
- o Budget should include bottom-line cost to the NSF.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

C. Due Dates

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

April 15, 2015

D. FastLane/Grants.gov Requirements

For Proposals Submitted Via FastLane:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: <https://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: <http://www.grants.gov/web/grants/applicants.html>. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

Proposers that submitted via FastLane are strongly encouraged to use FastLane to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program for acknowledgement and, if they meet NSF requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF either as *ad hoc* reviewers, panelists, or both, who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal. In addition, Program Officers may obtain comments from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards. A flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included in PAPPG Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at: https://www.nsf.gov/bfa/dias/policy/merit_review/.

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Building the Future: Investing in Discovery and Innovation - NSF Strategic Plan for Fiscal Years (FY) 2018 – 2022*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These "Broader Impacts" may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

2. Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. **Both** criteria are to be given **full consideration** during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (PAPPG Chapter II.C.2.d(i). contains additional information for use by proposers in development of the Project Description section of the

proposal). Reviewers are strongly encouraged to review the criteria, including PAPPG Chapter II.C.2.d(i), prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
 - a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
 - b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

Proposers are reminded that reviewers will also be asked to review the Data Management Plan and the Postdoctoral Researcher Mentoring Plan, as appropriate.

Additional Solicitation Specific Review Criteria

All NSF proposals must address the two NSF Merit Review Criteria (Intellectual Merit and Broader Impacts) explicitly. Proposals that do not adhere to this requirement will be returned without review.

Also, proposals must address the additional, equally weighted review criteria outlined as follows:

1. The likely success of the proposed organizational structure and approaches for managing the Technician Pool.
2. The ability of the institution to demonstrate its flexibility in the hiring of technicians to meet the fleet's dynamic requirements.
3. The reasonableness of the overall compensation structure (including sea-pay and benefits) in terms of the Technician Services envisioned.
4. The adequacy of the proposed approach to assuring required liability and Workman's Compensation coverage for individual members of the Technician Pool.
5. The capability of the organization to effectively coordinate, schedule and support the travel and training needs associated with the Technician Pool.
6. The reasonableness of the proposed approach to administering indirect costs associated with Technician Pool.
7. The realism and completeness of the budgeting approach for the proposed Technician Pool model.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review.

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will generally be completed and submitted by each reviewer and/or panel. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF strives to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

After programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications. After an administrative review has occurred, Grants and Agreements Officers perform the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process).

B. Award Conditions

An NSF award consists of: (1) the award notice, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award notice; (4) the applicable award conditions, such as Grant General Conditions (GC-1)*; or Research Terms and Conditions* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award notice. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at https://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=papppg.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer no later than 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). No later than 120 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report, will delay NSF review and processing of any future funding increments as well as any pending proposals for all identified PIs and co-PIs on a given award. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project-reporting system, available through Research.gov, for preparation and submission of annual and final project reports. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report also must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=papppg.

In addition to the required Annual and Project Outcomes Reports, the Awardee shall transmit formal interim Quarterly Reports to the cognizant NSF Program Officer summarizing accomplishments, issues and budgets associated with management of the Technician Pool. Informal communication between the Awardee and the NSF Program Officer concerning project status is anticipated on a monthly basis.

VIII. AGENCY CONTACTS

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- James Holik, Program Director, W8134, telephone: (703) 292-7711, email: jholik@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

IX. OTHER INFORMATION

The NSF website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this website by potential proposers is strongly encouraged. In addition, "NSF Update" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF [Grants Conferences](#). Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on [NSF's website](#).

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this mechanism. Further information on Grants.gov may be obtained at <http://www.grants.gov>.

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NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 55,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Arctic and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.E.6 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <https://www.nsf.gov>

- **Location:** 2415 Eisenhower Avenue, Alexandria, VA 22314
- **For General Information** (NSF Information Center): (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090

- **To Order Publications or Forms:**

Send an e-mail to: nsfpubs@nsf.gov

or telephone: (703) 292-7827

- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, [NSF-50](#), "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and [NSF-51](#), "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Office of the General Counsel
National Science Foundation
Alexandria, VA 22314

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